

# CONTINUATION/DIVISIONAL APPLICATION TRANSMITTAL

(Rule 53(b) Continuation or Divisional)

☐ DUPLICATE

Address to

**Assistant Commissioner for Patents**

**Box PATENT APPLICATION**

**Washington, D.C. 20231**

Attorney Docket No.:

REF/Burt/392CONT

First Named Inventor:

Peter C. W. Burt

Total Pages:

This requests a ☒ Continuation or ☐ Divisional application under 37 CFR 1.53(b) of prior application:

Appl. No.: 09/149,858

Group Art Unit: 3752

Filed on: September 9, 1998

Examiner: Derakshani

Entitled: Aerosol Dispenser and Method

- ☒ 1. The entire disclosure of the pending, prior application is hereby incorporated by reference.
- ☒ 2. Submitted herewith is a copy of the complete prior application as filed.
- ☐ 3. This application is filed by fewer than all the inventors named in the prior nonprovisional application, 37 CFR 1.53(b)(1). **DELETE** the following inventor(s): \_\_\_\_\_.
- ☒ 4. Submitted herewith is a copy of the signed Oath/Declaration from the prior application.
- ☐ 5. Small entity status was established in the prior application, and is still proper and desired.
- ☐ 6. A \_\_\_\_\_ month Petition for Extension of Time is filed concurrently in the prior application.
- ☒ 7. The Commissioner is authorized to credit any overpayment and charge any deficiency in any fees required under 37 CFR 1.16 and/or 1.17 to Deposit Account No. 02-0200.
- ☒ 8. A check in the amount of \$760.00 is submitted herewith.
- ☒ 9. Insert before the first sentence of the specification: -- This application is a Continuation of nonprovisional application Serial Number 09/149,858 filed September 9, 1998 which a continuation of U.S. application serial number 08/481,392, filed on July 18, 1995, which application is abandoned.--
- ☒ 10. Cancel in this application original claims 1-19 of the prior application before calculating the filing fee. At least one independent claim is retained.
- ☒ 11. The prior application is assigned of record to: Glaxo Group Limited.
- ☐ 12. Priority is claimed based on each foreign application so listed in the Oath/Declaration and a certified copy of each was filed in U.S. application number 08/481,392 filed July 18, 1995.
- ☒ 13. A Preliminary Amendment is enclosed.
- ☐ 14. Other: \_\_\_\_\_.

## THE FILING FEE IS CALCULATED AS FOLLOWS:

Basic Fee:

\$760.00

Total Claims:

17

- 20 =

X \$18 =

Independent Claims:

2

- 3 =

X \$78 =

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Multiple Dependent Claim (add \$260.00):

Subtotal:

760 00

50% Reduction if Small Entity Status:

Phone: 703-683-0500

Fax: 703-683-1080

Total:

\$760.00

Date:

August 23, 1999

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26,382

(16Nov1998)

08/23/99

JC639 U.S. PTO

003744000-00000000

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09/379492

08/23/99

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: :  
 :  
 Peter Colin Weston BURT :  
 :  
 Continuation of Serial No. 09/149,858 : Group Art Unit: 3752  
 :  
 This Application Filed: August 9, 1998 : Examiner: Derakshani  
 :  
 For: AEROSOL DISPENSER AND METHOD

**PRELIMINARY AMENDMENT AND  
INFORMATION DISCLOSURE STATEMENT**

Assistant Commissioner for Patents  
 Washington, D.C. 20231

Sir:

Prior to an examination on the merits, please amend the above identified application as follows:

**IN THE SPECIFICATION:**

Please insert as the first sentence --This application is a continuation application of pending allowed U.S. application serial number 09/149,858, filed September 9, 1998, which is a continuation of U.S. application serial number 08/481,392, filed on July 18, 1995, which application is abandoned.--

**IN THE CLAIMS:**

Please cancel claims 1-19 without prejudice or disclaimer and add the following new claims to the application.

-- 11 20. An aerosol dispenser comprising a body, a closure sealed to the body, and means for dispensing material from the interior of the dispenser, wherein the closure is welded ultrasonically to the body by a metal-to-metal weld.

21. An aerosol dispenser according to claim 20, wherein the metal-to-metal weld is between annular flanges on the body and closure extending circumferentially about the axis of the body and closure.

22. An aerosol dispenser according to claim 21, wherein the flanges are outwardly directed and flat.

23. An aerosol dispenser according to claim 21 wherein the flanges are axially directed and cylindrical.

24. An aerosol dispenser according to claim 21 wherein the flanges are welded, rolled and crimped together.

25. An aerosol dispenser according to claim 21 wherein one of the flanges is of greater width than the other, and wherein the outer edge portion of the wider flange forms a U within which the outer edge portion of the narrower flange is located, both said edge portions extending generally parallel to the adjacent wall of the body.

26. An aerosol dispenser according to claim 20, which is an inhaler and contains an aerosol medicament.

27. A method of assembling an aerosol dispenser comprising a metal body, a metal closure, and means for dispensing material from the interior of the dispenser, wherein the closure is welded ultrasonically to the body by a metal-to-metal seal.

28. A method of assembling an aerosol dispenser according to claim 27, wherein the closure, which comprises an annular flange extending circumferentially about its axis, is positioned at the open end of and coaxially with the body, which comprises a complementary annular flange extending circumferentially about its axis, such that the flanges are parallel and in contact with each other.

29. A method of assembling an aerosol dispenser according to claim 27, wherein the flanges are welded together by means of an ultrasonic welding head which is brought into communication with the flanges and moved circumferentially along the flanges to create a substantially continuous weld between the flanges until a complete revolution about the axis of the closure and body has been performed.

30. A method of assembling an aerosol dispenser according to claim 28 wherein the flanges are outwardly directed and flat.

31. A method of assembling an aerosol dispenser according to claim 29, whereby the ultrasonic welding head causes relative vibration between the flanges in a direction which is radial with respect to the said axis.

32. A method of assembling an aerosol dispenser according to claim 27 wherein the flanges are bent to lie in a substantially axial direction after the flanges have been welded together.

33. A method of assembling an aerosol dispenser according to claim 28 wherein the said flanges are axially directed and cylindrical.

34. A method of assembling an aerosol dispenser according to claim 33 wherein the ultrasonic welding head causes relative vibration between the flanges in an axial direction.

35. A method of assembling an aerosol dispenser according to claim 27 wherein one of the said flanges is of greater width than the other and after the flanges have been welded together the wider flange is rolled and crimped around the other flange.

36. A method of assembling an aerosol dispenser according to claim 27 wherein the flanges are rolled and crimped after they have been welded together.--

#### **REMARKS**

Applicants have amended the claims taking into consideration the prosecution in the parent application which has been allowed and in which the issue fee is due on November 15, 1999. The parent application was on appeal and the Examiner's Answer withdrew claim 31 from the appeal. A supplemental amendment was filed to place the application appeal in condition for allowance and this continuation was filed to pursue additional claims, including those on appeal.

Original claims 1-19 have been canceled from the application and replaced with claims 20 to 36 which were the claims previously on appeal and which are believed to be clearly patentable for the reasons of record.

The present application is a continuation application and the prior art cited in the parent applications should be taken into consideration in the present application. In accordance with MPEP § 2001.06(b), a separate information disclosure statement is not necessary. However, Applicants submit herewith copies of the information disclosure statements and PTO Form 892 from the parent applications

Continuation of U.S. Serial No. 09/149,858

In view of the above comments and further amendments to the claims an early and favorable action on the merits is now in order and is most respectfully requested.

Respectfully submitted,  
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August 23, 1999

## DEVICE

This invention relates to an aerosol dispenser, i.e. a dispenser from which a material can be dispensed in aerosol form. It is particularly, though not exclusively, concerned with metered dose medicament aerosols, for example metered dose inhalers.

The upper portion of one known dispenser is shown in vertical section in Figure 1 of the accompanying drawings. This comprises a metal can body 1 and a metal closure 2 having a flange 3 the lower end of which is crimped around an upper wall portion 4 of the can body 1. The closure 2 has a downwardly opening annular channel 5 within which is received a sealing gasket 6. The upper edge of the wall portion 4 of the can body 1 is in sealing engagement with the gasket 6.

The dispenser is provided with a valve arrangement 7, the purpose of which is to enable metered doses of a material held under pressure within the can body 1 to be dispensed. Most of the details of this are not relevant to the present invention, and, furthermore, they are conventional. For the purposes of the present discussion it is sufficient to note that the valve arrangement 7 includes a metering chamber 8, within which a dose is held prior to being dispensed, and a hollow stem 9 which is longitudinally movable with respect to the chamber 8. The stem has a transfer port 10 and an outlet 11. When the stem is depressed from the position shown, the dose passes from the chamber 8 through the port 10 into the stem, and from there it passes out through the outlet 11. The stem 9 is in slidably sealing engagement with an aperture formed in the centre of a sealing ring 12.

Although the materials used for gaskets in aerosol dispensers are carefully chosen when medical applications are involved, to be as inert as possible, it is nevertheless recognised that it is desirable to reduce the amount of gasket material which can come into contact with the material to be dispensed. The largest gasket area in Figure 1 is that presented by the gasket 6, and it would therefore be particularly desirable to eliminate gasket 6. Such elimination also potentially offers the prospect of a cheaper dispenser than Figure 1, by virtue of the fact that it uses one less component.

It is also desirable to ensure that the aerosol dispenser is as nearly leak-proof as possible, and the gasket 6, though found in practice to give a good performance in this respect, does offer a potential leakage path extending circumferentially around the container. For that reason also, it would be desirable to eliminate the gasket and provide a seal between the body 1 and closure 2 which offered no such potential leakage path.

According to the present invention there is provided an aerosol dispenser which comprises a body, a closure sealed to the body, and means for dispensing material from the interior of the dispenser, wherein the closure is welded to the body by a metal-to-metal weld. Preferably the welding is carried out ultrasonically.

The invention also provides a method of assembling an aerosol dispenser comprising a metal body, a metal closure, and means for dispensing material from the interior of the dispenser, wherein the closure is welded to the body by a metal-to-metal seal.

Further characteristics of the invention will become apparent from the following description and accompanying drawings, wherein:

Figure 2 is a vertical section through an embodiment of the invention; and

Figure 3 shows the embodiment of the invention as shown in figure 2 together with part of one form of ultrasonic welding head (shown diagrammatically);

Figure 4 shows the embodiment of the invention as shown in figure 2 together with part of a second form of ultrasonic welding head (shown diagrammatically);

Figure 5 is a graph showing a comparison of leakage results from cans sealed by metal-to-metal welds with cans sealed conventionally by crimping;

Figure 6 is a graph showing a comparison of moisture ingress results into cans sealed by metal-to-metal welds with cans sealed conventionally by crimping;

Figure 7 is a vertical section through a second embodiment of the invention, together with part of an ultrasonic welding head (shown diagrammatically);



Figure 8 shows a detail of a modification of the embodiment of Figure 7;

Figure 9 shows a further embodiment; and

Figures 10a to 10c show successive steps in assembling the embodiment of Figure 9.

In Figure 2, the same numerals are used as in Figure 1 for the corresponding parts. It will be seen that the metal body 1 terminates at its upper end in an outwardly directed, planar, annular flange 14, and that the circumferentially outer portion of the metal closure 2 is likewise in the form of a planar, annular flange 15. The flanges 14 and 15 are welded together along their mating surfaces 16 by a metal-to-metal weld. It is convenient to weld the flanges ultrasonically using conventional apparatus as for example is described in United States Patent Number 4749437. Ultrasonic welding enables only very localised heating to be produced in the region of the weld itself. This may enable the can to be filled before the closure is secured thereto (the alternative being to fill the can through the valve arrangement) since it reduces the risk of the medicament being undesirably heated.

Two alternative procedures will now be mentioned with reference to Figures 3 and 4 for forming the weld between the flanges 14 and 15. In the first as depicted in Figure 3, an ultrasonic welding head travels circumferentially along the flanges until a complete revolution has been performed. This can be done relatively simply though the welding time is then quite long. The welding head can comprise two wheels 17 and 18, one of which engages flange 14 and the other of which engages flange 15. Each wheel is rotatable about an axis extending radially with respect to the annular flange. The wheels are urged towards one another, and at least one of them is vibrated at an ultrasonic frequency along its axis of rotation.

In the second procedure as depicted in Figure 4, a torsional weld is formed. This involves placing a fixed member or anvil 19 on one side of the pair of flanges (preferably abutting flange 14), and bringing into contact with the other flange (preferably flange 15) a welding horn in the form of a ring 20 which is coaxial with the flange and which vibrates at an ultrasonic frequency about its axis of rotational symmetry.

The following tables set out the mean, maximum and minimum results of testing for leakage and moisture ingress in the case of metal closures sealed to metal cans by ultrasonic welding, and metal closures sealed to metal cans by conventional crimping. The results are summarised in the graphs of Figures 5 and 6, which plot the average results attained in each test. The leakage tests were carried out using a number of samples of can/closure, and in each case the cans were filled with a quantity of propellant and the amount of propellant which had leaked from the can was determined at intervals by weighing the sealed can. The moisture ingress tests were also carried out using a number of samples of can/closure, and in each case a quantity of hygroscopic material (molecular sieve pellets) was sealed in a can and the amount of moisture which had been absorbed by the material was determined at intervals by weighing the sealed can.

The results of the leakage tests show that cans with closures sealed by ultrasonic welding exhibit lower leakage at each weighing interval both under ambient atmospheric conditions and under conditions of high temperature (40°C) and high relative humidity (85%).

The results of the moisture ingress tests show that under ambient atmospheric conditions the two methods of sealing gave similar effects. However, under conditions of high temperature (40°C) and high relative humidity (85%), no moisture ingress could be detected with the ultrasonic weld, whereas significant moisture ingress occurred with the crimped seal.

**TABLE 1**  
**LEAKAGE TEST RESULTS**

**Propellant Filled Ultrasonic Weld-Sealed Inhalers**

**Ambient Storage - sample size: 11 inhalers**

	<b>Weight Loss (g)</b>			
	<b>7 days</b>	<b>14 days</b>	<b>21 days</b>	<b>28 days</b>
Mean	-0.001	-0.001	0.000	0.001
Maximum	0.001	0.000	0.001	0.002
Minimum	-0.002	-0.002	-0.001	0.000

**40°C/85% Relative Humidity Storage - sample size: 10 inhalers**

	<b>Weight Loss (g)</b>			
	<b>7 days</b>	<b>14 days</b>	<b>21 days</b>	<b>28 days</b>
Mean	-0.001	0.002	0.005	0.013
Maximum	0.002	0.009	0.018	0.061
Minimum	-0.002	0.000	0.001	0.002

**Propellant Filled Crimp-Sealed Inhalers**

**Ambient Storage - sample size: 14 inhalers**

	<b>Weight Loss (g)</b>			
	<b>7 days</b>	<b>14 days</b>	<b>21 days</b>	<b>28 days</b>
Mean	0.001	0.003	0.005	0.011
Maximum	0.002	0.006	0.008	0.015
Minimum	-0.002	0.000	0.002	0.008

**40°C/85% Relative Humidity Storage - sample size: 15 inhalers**

	<b>Weight Loss (g)</b>			
	<b>7 days</b>	<b>14 days</b>	<b>21 days</b>	<b>28 days</b>
Mean	0.006	0.019	0.031	0.048
Maximum	0.009	0.023	0.036	0.056
Minimum	0.003	0.016	0.026	0.042

**TABLE 2**  
**MOISTURE INGRESSION TEST RESULTS**

**Silica Gel Filled Ultrasonic Weld-Sealed Inhalers**

**Ambient Storage - sample size: 11 inhalers**

	<b>Weight Gain (g)</b>			
	<b>7 days</b>	<b>14 days</b>	<b>21 days</b>	<b>28 days</b>
Mean	0.001	0.001	0.002	0.000
Maximum	0.002	0.002	0.003	0.002
Minimum	0.000	0.000	0.001	-0.002

**40°C/85% Relative Humidity Storage - sample size: 15 inhalers**

	<b>Weight Gain (g)</b>			
	<b>7 days</b>	<b>14 days</b>	<b>21 days</b>	<b>28 days</b>
Mean	0.002	0.002	0.003	0.003
Maximum	0.005	0.003	0.004	0.004
Minimum	0.001	0.001	0.002	0.002

**Silica Gel Filled Crimp-Sealed Inhalers**

**Ambient Storage - sample size: 15 inhalers**

	<b>Weight Gain (g)</b>			
	<b>7 days</b>	<b>14 days</b>	<b>21 days</b>	<b>28 days</b>
Mean	-0.001	-0.001	0.000	-0.002
Maximum	0.000	0.001	0.001	0.000
Minimum	-0.002	-0.002	-0.002	-0.003

**40°C/85% Relative Humidity Storage - sample size: 15 inhalers**

	<b>Weight Gain (g)</b>			
	<b>7 days</b>	<b>14 days</b>	<b>21 days</b>	<b>28 days</b>
Mean	0.002	0.005	0.007	0.008
Maximum	0.004	0.006	0.009	0.009
Minimum	0.000	0.003	0.006	0.007

When the flanges 14 and 15 have the form shown in Figure 2, the contents of the dispenser, being under pressure, exert a peel force on the weld between the flanges. A welded joint is relatively weak under a peel force, though nevertheless strong enough to withstand any force to which it is reasonably likely to be exposed. If, however, it is desired to avoid exposing the welded joint to a peel force, the flanges can alternatively have the shape in Figure 7 wherein the flanges are axially directed and cylindrical. To achieve this, either the flanges may be welded in the form shown in Figure 2, and then bent through 90°, or they may be bent first and welded afterwards.

In the latter case, the weld may be formed by an ultrasonic welding device shown in Figure 7 in which a first wheel 21 travels around the outside of the flange 14, and a second wheel 22, mounted eccentrically with respect to the longitudinal axis of the dispenser, contacts the inside of the flange 15 at a point which moves around the flange 15 in unison with the movement of the first wheel until a complete revolution of the flange has been performed. During this process, the wheel 21 vibrates ultrasonically along its axis of rotation (i.e. up and down as drawn), the wheels 21 and 22 simultaneously being urged towards one another with a substantial force. Means (not shown) are provided to ensure that the closure does not fall into the can body during the sealing process. The second wheel 22 has the shape of an inverted cup, in order to avoid being fouled by the valve stem 9 and the adjacent portion of the closure 2.

An alternative to the flange shape of Figure 7 as a way of avoiding subjecting the weld joint to a peel force is shown in Figure 8, in which the flanges are welded in the shape shown in Figure 2, and then bent downwardly.

Correctly carried out, ultrasonic welding should give a completely leak-proof seal between the flanges. However, it is possible as a precaution to further seal the flanges together by having interengaging U-shaped portions on the body and closure. This is shown in Figure 9, and Figures 10a to 10c show successive steps in sealing the closure to the body to form the construction shown in Figure 9. The ultrasonic weld is formed after the closure 2 and can body 1 have been formed as shown in Figure 10a and assembled with one another, but before the rolling and crimping operations of Figures 10b and 10c have been carried out.

**CLAIMS**

- 5 1. An aerosol dispenser comprising a body, a closure sealed to the body, and means for dispensing material from the interior of the dispenser, wherein the closure is welded ultrasonically to the body by a metal-to-metal weld.
- 10 3. An aerosol dispenser according to claim 1, wherein the metal-to-metal weld is between annular flanges on the body and closure extending circumferentially about the axis of the body and closure.
- 15 4. An aerosol dispenser according to claim 3 wherein the flanges are outwardly directed and flat.
- 5 5. An aerosol dispenser according to claim 3 wherein the flanges are axially directed and cylindrical.
- 20 6. An aerosol dispenser according to any of claims 3 to 5 wherein the flanges are welded, rolled and crimped together.
- 25 7. An aerosol dispenser according to any of claims 3 to 5, wherein one of the flanges is of greater width than the other, and wherein the outer edge portion of the wider flange forms a "U" within which the outer edge portion of the narrower flange is located, both said edge portions extending generally parallel to the adjacent wall of the body.
- 30 8. A method of assembling an aerosol dispenser comprising a metal body, a metal closure, and means for dispensing material from the interior of the dispenser, wherein the closure is welded ultrasonically to the body by a metal-to-metal seal.
- 35 9. A method of assembling an aerosol dispenser according to claim 8, wherein the closure, which comprises an annular flange extending circumferentially about its axis, is positioned at the open end of and co-axially with the body, which comprises a complementary annular flange

extending circumferentially about its axis, such that the flanges are parallel and in contact with each other.

5 11.0 A method of assembling an aerosol dispenser according to claim 10, wherein the flanges are welded together by means of an ultrasonic welding head which is brought into communication with the flanges and moved circumferentially along the flanges to create a substantially continuous weld between the flanges until a complete revolution about the axis of the closure and body has been performed.

10 12. A method of assembling an aerosol dispenser according to claim 11 wherein the said flanges are outwardly directed and flat.

15 13. A method of assembling an aerosol dispenser according to claim 12, whereby the ultrasonic welding head causes relative vibration between the flanges in a direction which is radial with respect to the said axis.

20 14. A method of assembling an aerosol dispenser according to claim 10, wherein the flanges are outwardly directed and flat and wherein a fixed member is placed on one side of the pair of flanges and a welding horn in the form of a ring is brought into contact with the other flange to urge the flanges together, said ring being coaxial with and of substantially the same diameter as the said flanges, and whereby the ring is vibrated at an ultrasonic frequency about its axis of rotational symmetry to weld the flanges together.

25 15. A method of assembling an aerosol dispenser according to any of claims 10 to 14 wherein the flanges are bent to lie in a substantially axial direction after the flanges have been welded together.

30 16. A method of assembling an aerosol dispenser according to claim 11 wherein the said flanges are axially directed and cylindrical.

- התאחדות חובבי חרש



## ABSTRACT

### Device

5 An aerosol dispenser is provided which comprises a body (1), a closure (2) sealed to the body (1), and means (7) for dispensing material from the interior of the dispenser. The closure (2) is welded to the body (1) by a metal-to-metal weld. Preferably the welding is carried out ultrasonically. A method for assembling the aerosol dispenser is also provided.

10

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FIG. 1

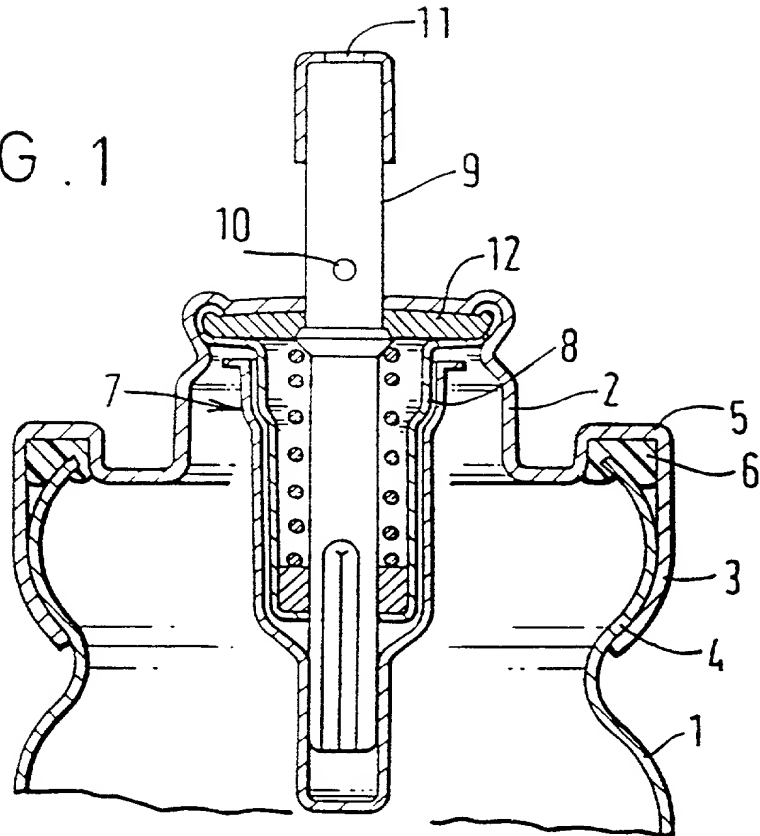


FIG. 2

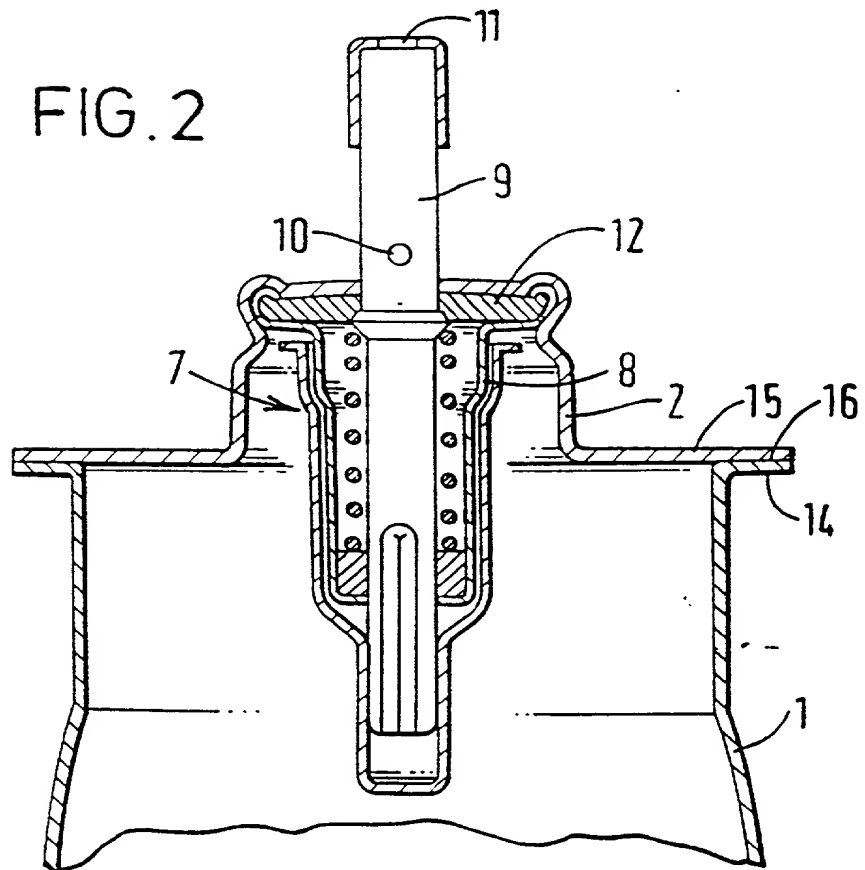


FIG. 3

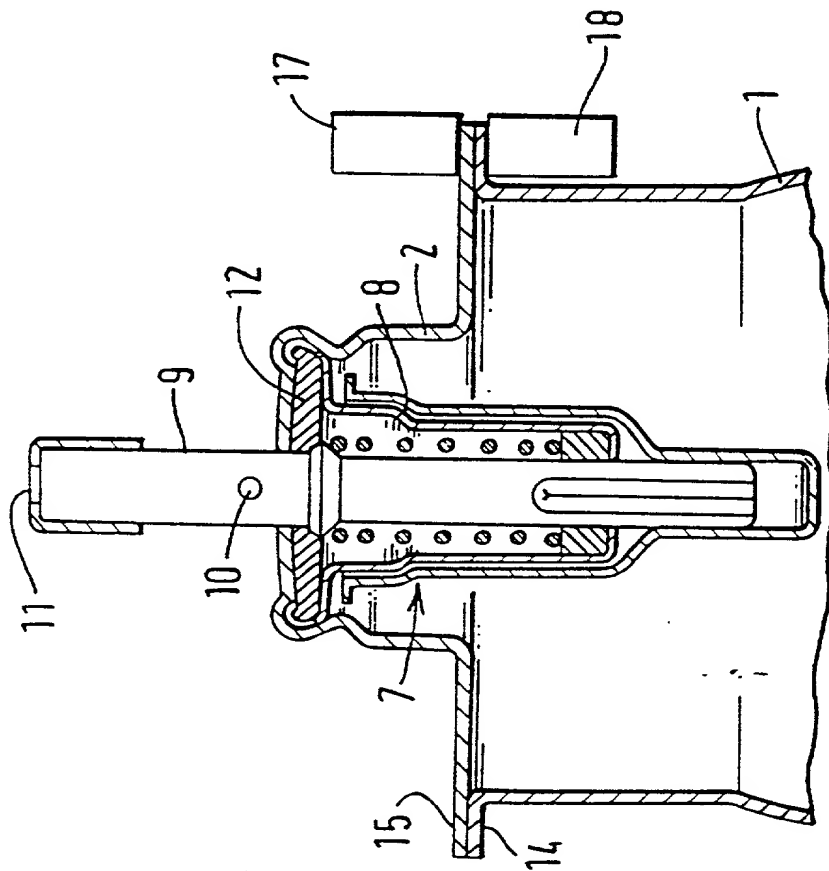
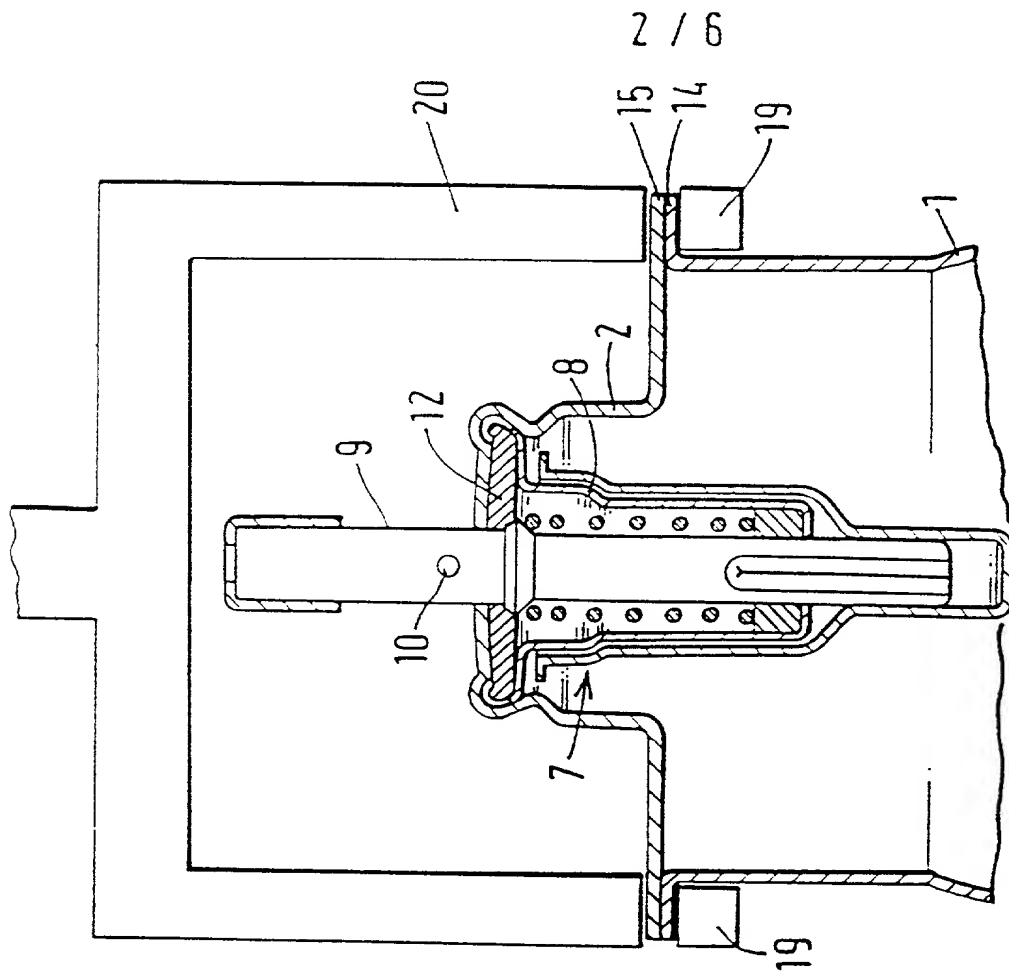


FIG. 4



**FIG. 5**  
Comparison of leakage results

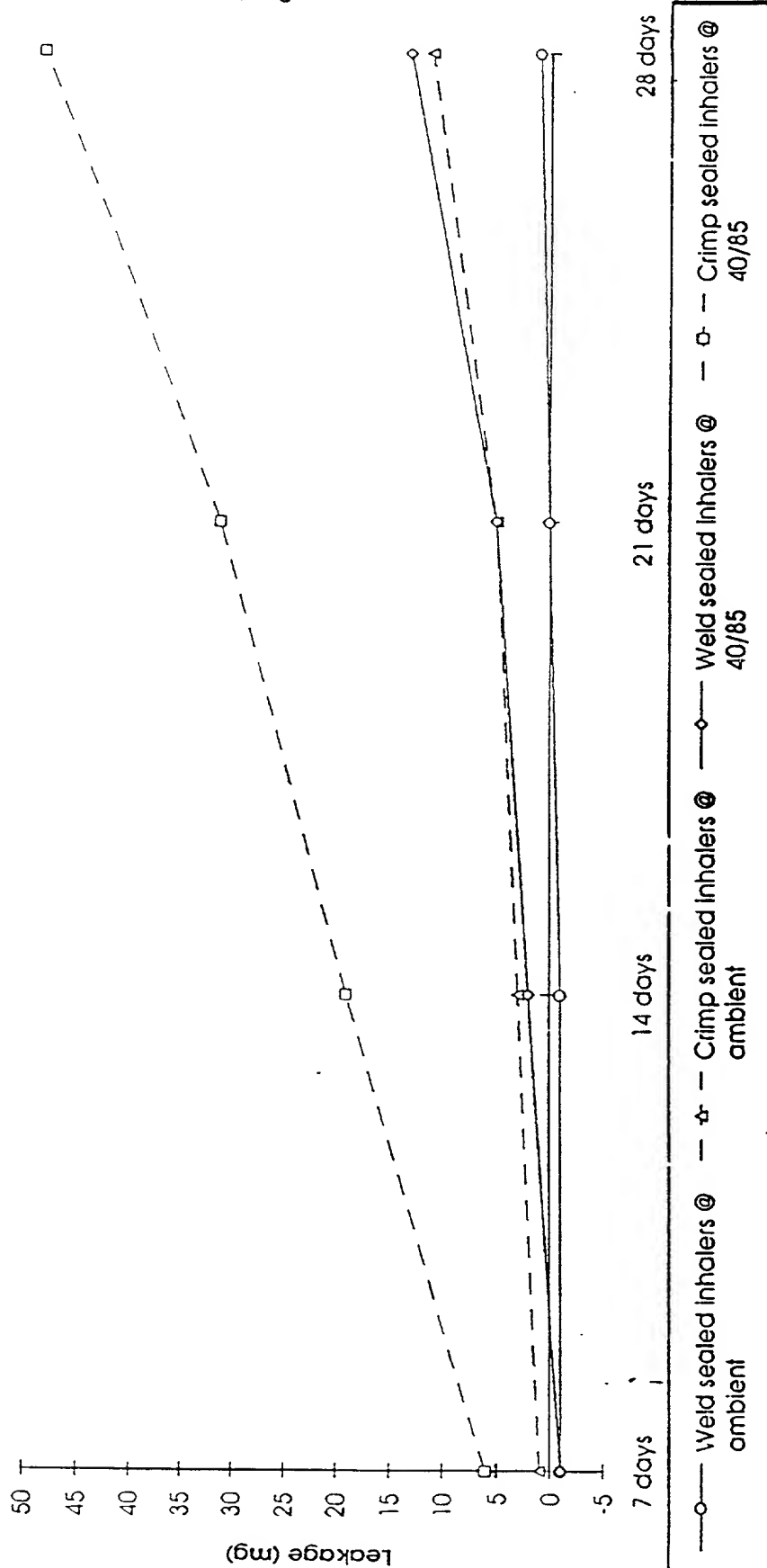


FIG. 6  
Comparison of moisture Ingression results

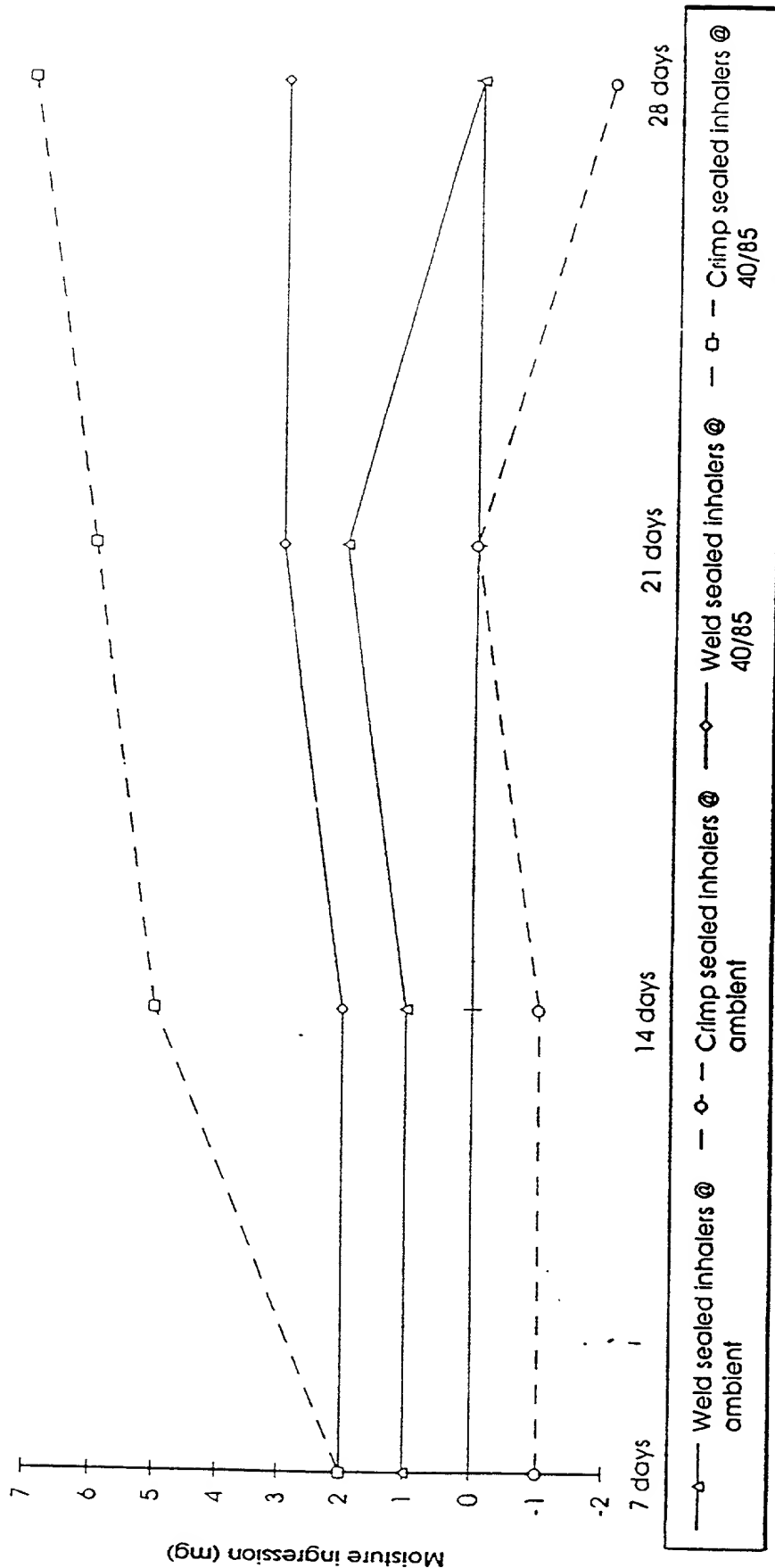


FIG. 7

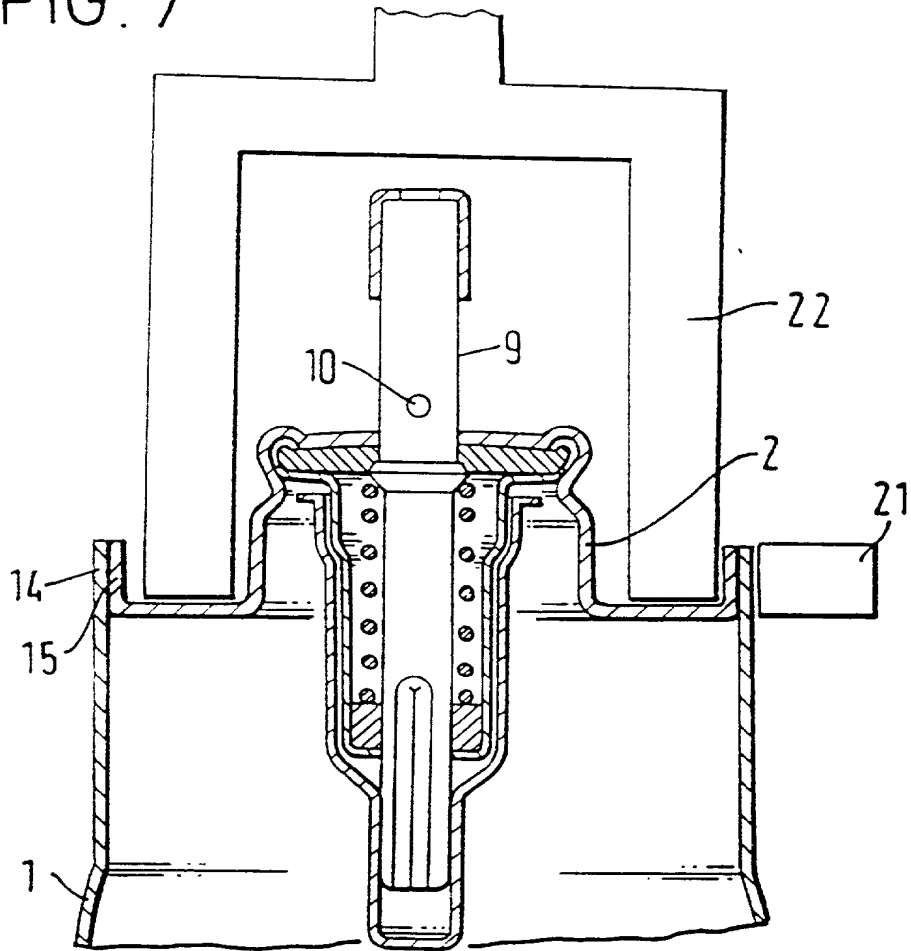
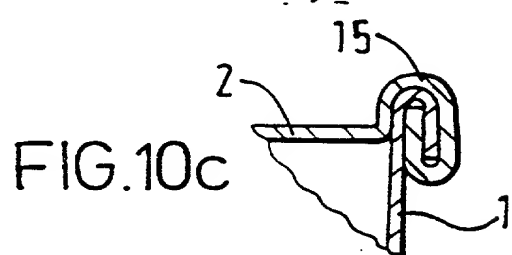
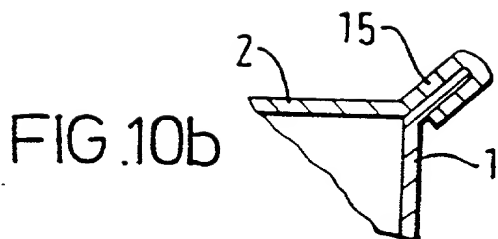
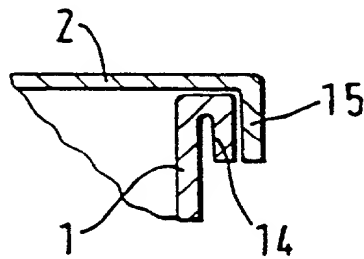


FIG. 8



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FIG. 9

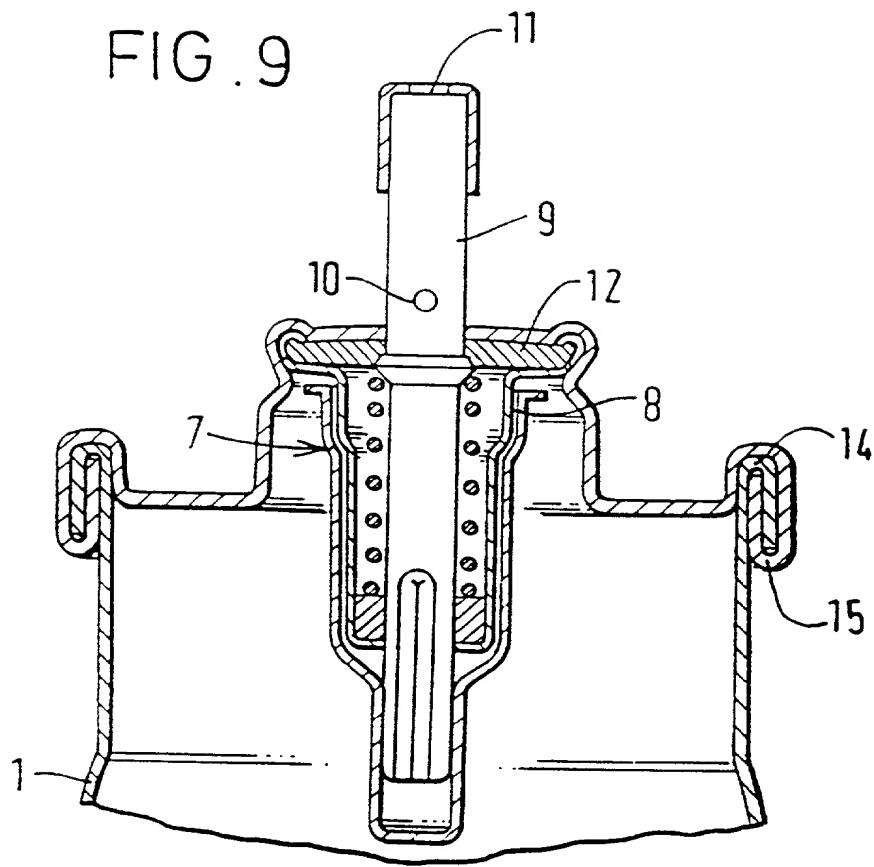
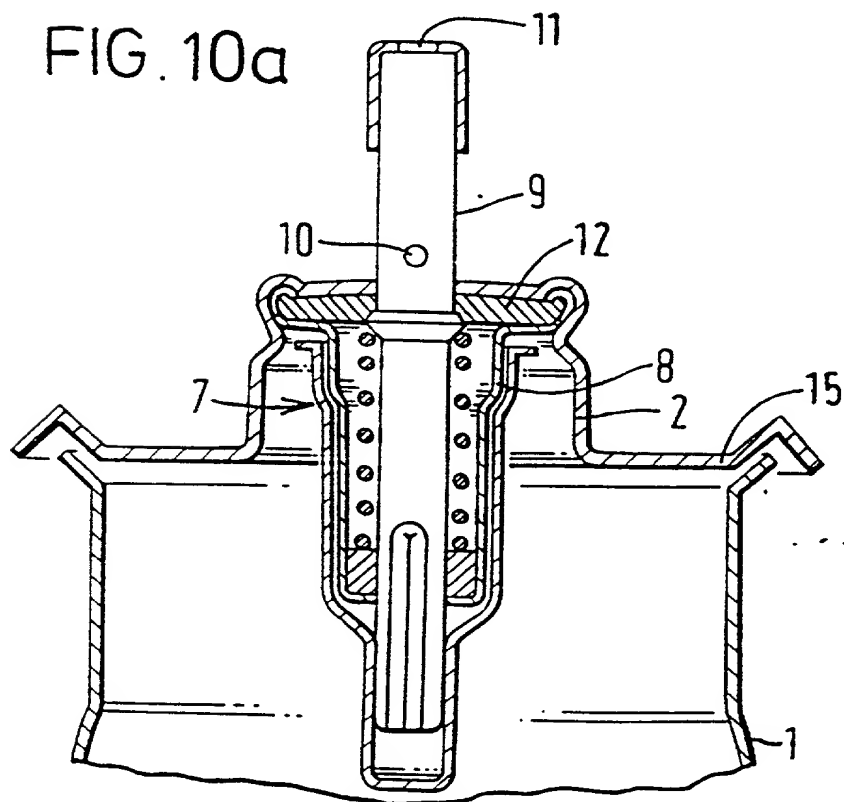


FIG. 10a



DECLARATION FOR PATENT APPLICATION  
AND APPOINTMENT OF ATTORNEY

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name; I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention (Design, if applicable) entitled

Device

the specification of which (check one): ☐ is attached hereto; ☐ was filed on \_\_\_\_\_ as Application Serial No. \_\_\_\_\_ and was amended on (or amended through) \_\_\_\_\_ (if applicable); was filed on 17 January 1994 as International Application (PCT) No. PCT.EP94.00101 and amended on \_\_\_\_\_ (if applicable). I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a). I hereby claim foreign priority benefits under Title 35, United States Code §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

## Prior Foreign Application(s)

## Priority claimed

9300931.4	GB	19 January 1993	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year filed)	Yes	No
9300932.2	GB	19 January 1993	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year filed)	Yes	No
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(Number)	(Country)	(Day/Month/Year filed)	Yes	No
			<input type="checkbox"/>	<input type="checkbox"/>
(Number)	(Country)	(Day/Month/Year filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

PCT.EP94.00101	17 January 1994	PENDING
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(Appln. SN)	(Filing Date)	(Status - Patented, Pending or Abandoned)
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(Appln. SN)	(Filing Date)	(Status - Patented, Pending or Abandoned)
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I HEREBY DECLARE THAT ALL STATEMENTS MADE HEREIN OF MY OWN KNOWLEDGE ARE TRUE AND THAT ALL STATEMENTS MADE ON INFORMATION AND BELIEF ARE BELIEVED TO BE TRUE; AND FURTHER THAT THESE STATEMENTS WERE MADE WITH THE KNOWLEDGE THAT WILLFUL FALSE STATEMENTS AND THE LIKE SO MADE ARE PUNISHABLE BY FINE OR IMPRISONMENT, OR BOTH, UNDER SECTION 1001 OF TITLE 18 OF THE UNITED STATES CODE AND THAT SUCH WILLFUL FALSE STATEMENTS MAY JEOPARDIZE THE VALIDITY OF THE APPLICATION OR ANY PATENT ISSUED THEREON.



DECLARATION FOR PATENT APPLICATION  
AND APPOINTMENT OF ATTORNEY

Page 2

Attorney/Docket No. \_\_\_\_\_  
Last Name of First Inventor : **BURT**

POWER OF ATTORNEY: I (We) hereby appoint as my (our) attorneys, with full powers of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office connected therewith : J. Ernest Kenney, Reg. No. 19,179; Eugene Mar, Reg. No. 25,893; Richard E. Fichter, Reg. No. 26,382; Charles R. Wolfe, Jr., Reg. No. 28,680; Thomas J. Moore, Reg. No. 28,974; David E. Dougherty, Reg. No. 19,576; Bruce H. Troxell, Reg. No. 26,592.

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(703) 683-0500

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State or Country Zip <b>Herts. SG12 0DP Great Britain</b>	State or Country Zip <b>Herts. SG12 0DP Great Britain</b>
Date <b>22<sup>nd</sup> June 1995</b>	Signature <i>Pete Burt</i>

Full Name of Joint Inventor	Citizenship
RESIDENCE Address - Street	Post Office Address - Street
City	City
State or Country Zip	State or Country Zip
Date	Signature

Full Name of Joint Inventor	Citizenship
RESIDENCE Address - Street	Post Office Address - Street
City	City
State or Country Zip	State or Country Zip
Date	Signature

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Date	Signature

(See following page(s) for additional joint inventors)